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# INDUSTRIAL COMBINATION AND THE STANDARDIZATION OF PRODUCTION

## I. INTRODUCTION

A profusion of styles and brands of goods was one of the characteristics of pre-war individualism. The American manufacturer did not force American consumers to lie in an iron bed of Procrustes of standard dimension, but he furnished them with iron, brass, and wooden beds of manifold sizes and designs. American producers did not prescribe an unvarying color scheme, for the American householder could choose among more than one hundred shades of house paint. The variety of design in ordinary articles gave full opportunity for the satisfaction of the most fastidious tastes; the discriminating judge of chairs had 518 patterns of piano stools and a countless legion of ordinary chairs from which to make his choice; the connoisseur of plows and cultivators could undoubtedly find the style dictated by his own individualistic notions from the varied assortment displayed by the agricultural implement dealers; and anyone who was particular about the appearance of the interior of his house could spend his lifetime in examining samples of wall paper. From the cradle to the grave, from the many varieties of cribs and baby carriages to the profusion of styles in burial shrouds and coffins, the American consumer has been unrestricted in his choice.

Lack of standardization is found chiefly in manufactured products, where variety can be introduced at the whim of the manufacturer. Definite grades have been established for the basic raw materials like wheat, cotton, wool, lumber, coal, and iron, where style and appearance are not important, and where the commodity is evaluated by physical and mechanical tests. As the raw material emerges into the field of finished products, however, it breaks up into many brands differentiated from each other by the intangible and aesthetic qualities of shape, color, and design, which cannot often be reduced to a single mechanical standard. It is true that standard bolts and screws are used in the manufacture

of all automobiles, that the Ford car is a complete, standardized, finished product, and that there are many cases of interchangeable mechanisms and standardization in minor details, but these examples make a small showing compared with the motley array of brands, trade-marks, and styles that characterize most industries in the United States. We are yet far from that "millennium" where the consumer can buy a standard limousine, standard suits of clothing graded according to wool content and durability, standard furniture, and standard canned foods of guaranteed purity, weight, and quality. To satisfy the eccentricities and individualistic notions of consumers we still present a constant succession of new styles in our national window display.

The responsibility for this medley of patterns, however, is to be charged not mainly to the individualistic tastes of consumers but rather to the individualism in business enterprise. While the psychic satisfaction derived by the consumer in the enjoyment of something different from the ordinary staple has contributed to create and support the multiplication of brands, the chief driving power has been excessive competition among manufacturers. To avoid the cutthroat competitive struggle that ensues when each of several rival producers of standard articles lowers his price in order to absorb the market of the others and thereby finally to attain the goal of maximum output and minimum overhead charges, each producer seeks to introduce his own special brand, which cannot be readily compared with the products of other manufacturers, and which can therefore be sold at a different price. Competition is thus transferred from the plane of price to that of quality, and the poor consumer, who obtained the chief pecuniary benefits while the cutthroat price competition lasted, is thrown off the scent of low prices and induced to pay more for a staple product disguised by ornamental features. The evolution of brands is the buffer that prevents excessive price competition from leading to monopoly, but, like other buffers, it is by nature a temporary device whose value we may well question.

## II. ADVANTAGES OF STANDARDIZATION DURING PEACE

In fact, these hardships imposed on the consumer, as well as the higher costs inflicted on the manufacturer and the waste of

national resources involved in supporting this extravagant pleasure display, raise the question as to whether our long-cherished liberty—of having so much to choose from that we cannot make an intelligent choice—is worth clinging to. Even in times of peace it is perhaps self-evident that an extreme individualism in style results in an uneconomical application of the nation's resources, because unnecessary material and capital are tied up in large dealers' stocks, because the multiplicity of styles lessens the degree of specialization with its attendant social advantages, and because the making of useless frills requires more material, more labor, and more shipping space than the unadorned article. It is equally plain that the costs are increased to the manufacturer, and that prices are correspondingly raised to the consumer. The extra materials and labor required by the ornaments, the risk of these specialties going out of style, and the luxury of handmade and small-scale production must be paid by the producer and passed on to the consumer. Consequently unlimited freedom of choice costs the consumer money as well as the time spent in choosing between similar brands.

Some of this individuality of style is worth its social cost. A society in which everyone rode in Ford cars and lived in uniform cement houses would be monotonous, even though it were the most economical. It is also true that some differences in size and style are required by the exigencies of industry and natural individual differences. Beyond this necessary minimum, freedom of individual expression and personal preference count for more in some branches of production than in others, and any unnecessary indulgence of individual eccentricities in those lines where it is least important merely lessens the surplus capital that might be used for the cultural expression of a people along lines where fine differences count for the most in artistic effect.

### III. ADVANTAGES OF STANDARDIZATION IN WAR

Standardization during peace bears its fruits of lowered costs and increased efficiency that finally communicate themselves by devious paths to the consumer's pocketbook, but standardization during war immediately converts itself into the vital purpose that is in everyone's heart and mind. Mass production is the keynote of war preparation; to span the ocean with ships, to deluge the

enemy with steel, to overwhelm him by the weight of numbers, are the paramount necessities of war. The cry is constantly "more and more" and "faster and faster," and there is no thought of style or brand as we seek to manufacture quantities of shells sufficient to protect the lives of our soldiers by a curtain of fire.

The very extent to which we succeeded in the war just ended was indicated by the progress of standardization. The faults in our early airplane program consisted of our experimentation with many types of airplanes and the delay in devising a standard motor; its eventual success consisted in the adoption of the standard Liberty motor and the quantity production of the De Haviland 4 type of airplane. The criticism of our early shipbuilding program was laid at the door of the controversy as to what kind of ships to build; its crowning success lay in the standardization of the style of ship so that the shipyards became merely assembling-places for steel plates. To be sure there was necessity for variety in the military program—for heavy artillery and light artillery, for bombing airplanes and observation airplanes—but when specialization in fundamentals was achieved further specialization merely retarded the advance of the military program.

The same standardization which characterized our war preparation affected and entered into the life of the soldier. The standardization of the soldier's uniform, food, equipment, lodging, etc., not only cheapened the cost of his support and made possible the equipment of more soldiers in a shorter time but also contributed to create the very morale which makes a soldier out of a civilian. Plain food and regular hours were the basis of physical fitness and physical courage; equality of living conditions contributed to the scheme of discipline which the standardized drill instilled. In short, a war machine is made by standardization, so that each gun, each ship, each man, fits into the proper groove and moves as a part of the entire mechanism when the commander in chief presses the button.

If standardization is thus so essential to the war machine proper, it can hardly be less essential to the rest of the industrial organization of the nation, which is so intimately related to the war machine that it is really a part of it. While the enforcement of commands over industry is far more difficult than the enforcement of discipline

in the army or the establishment of uniform specifications for plants with government contracts, it is none the less imperative to standardize all the industries of a nation in time of war, whether these industries be called essential or nonessential. Standardization even among normal industries spells economy and conservation.

Economy in the use of steel during peace translates itself into lower costs; economy in the use of steel during war spells more ships, more shells, and more guns, which means life to thousands of soldiers and victory to the nation. Economy in shipping space during peace may signify lessened cost to the consumer or even possibly turn the scales between a profitable and a bankrupt railroad, but economy in shipping space during war widens the neck of the bottle through which our supplies are pouring to the battle front. When it becomes, in the language of the Conservation Section of the War Industries Board, "of primary importance that the country's resources be used to full advantage, and that we husband our supplies of materials, equipment, and capital in order that they may be applied to essential war needs," then saving becomes the handmaid of the production of the sinews of war. An ounce of steel saved from nonessential uses is an ounce of steel made for the winning of the war.

#### IV. METHODS OF STANDARDIZATION DURING THE WAR

To realize these economies during the war a combination of the members of an industry into an effective unit was essential. The adoption of any plan for standardization presumes a uniform practice within a whole industry, and when no combination already exists that uniformity must be attained by agreement of the individual firms, either arrived at of their own volition or by government coercion.

In Germany combination among industries was brought about by government compulsion, but in this country the necessary degree of combination was attained by the industries themselves through their War Service committees under the aid and encouragement of the War Industries Board. The War Service committees in the United States were organized along trade lines under the leadership of the United States Chamber of Commerce and with the consent and co-operation of the War Industries Board. These

committees were the media through which a united expression of opinion was obtained from a trade as to programs of standardization, and through which the Conservation Section of the War Industries Board announced its program to the trade. They communicated to the Conservation Section the technical trade information upon which the conservation programs were based, and they co-operated with the Conservation Section and with their own trades in formulating the schedule of standardization that would be finally put into effect. The following were the main types of standardization adopted in the United States:<sup>1</sup>

1. *Reduction in the number of brands.*—The first step in the direction of standardization was merely to reduce the number of brands, without necessarily eliminating those which were particularly wasteful of raw material. Such conservation measures as reducing the number of styles of stoves by 75 per cent had a beneficial effect in decreasing the size of dealers' stocks. To secure even these benefits agreement within the trade was necessary, for unless all the firms eliminated the same brands a reduction in the total number of brands manufactured in the entire industry might not be effected.

2. *Elimination of wasteful brands.*—Usually it was possible not only to reduce the number of brands in a trade but also to eliminate brands which used large amounts of steel, which occupied unusual bulk in shipping, or which required rare or imported materials. Thus the curtailment of brands using Damur enamel conserved the tonnage used in importing that product; while the

<sup>1</sup> Information as to the extent of standardization abroad is very meager, but reports thus far received indicate that standardization was a universal war-time phenomenon. Germany, which regulated the minute details of every industry with an iron hand and forced the formation of combinations with little regard to the desires of the individuals composing them, probably was the first to put standardization of brands into general practice. In order to save leather a standard shoe with wooden soles and an upper made of some textile and allowing but a thin strip of leather were prescribed for the civilian population, and even the German women were compelled to wear the universal high collar and the tight-fitting skirts which the German Central Clothing Office dispensed. Great Britain began to manufacture standard clothing for the civilian population in 1918. Italy limited the height of shoes and prescribed the percentage of wool that could be contained in garments at the same time. In France a committee was appointed with power to prescribe the styles and brands of goods. In most of these cases the standardization of goods was adopted not only to save materials but also to enable the government to fix the price of the goods.

stripping of tin linings from oven doors and the reduction of the size of baby-carriage wheels saved steel, and the prohibition of peg-top trousers and the ban against cuffs, belts, and flaps on clothing saved whatever wool those appendages consumed.

In addition to curtailing these objectionable features, limits were imposed on the height of women's shoes and of men's hats, and on the size of trunks.

3. *Fixing of new standards.*—Complete standardization is not attained, however, until all the specifications for making the article are prescribed and the number of standard articles is limited to a very few. The chief instance of this during the war was the standard buggy and the two standard sizes of spring wagons. Standardization to this degree would inevitably result in combination, because it would be most profitable either for different firms to specialize in the manufacture of separate parts of the standard buggy or for the largest and most efficient plant to manufacture all the standard buggies under the most favorable conditions of quantity production, even as Henry Ford manufactures his horseless buggy.

#### V. LEGALITY OF COMBINATIONS TO SECURE STANDARDIZATION

It is thus apparent that the success of standardization during war depends upon co-operation, and that the greater and more drastic the degree of standardization the more perfect will be the resulting combination. The continuance of standardization during peace accordingly involves the question of the legality of the combinations that are necessary to secure it.

Agreements to standardize minor parts of some commodity made by rival manufacturers have frequently been made and are undoubtedly legal, provided the main aspects of competition are not thereby obstructed. Standardization on a large scale would probably also be legal if it could be separated from all the tendencies toward monopoly that are frowned upon by the Sherman Law. Standardization on a large scale, however, can hardly be attained without an unlawful degree of combination, for standardization not only requires the suppression of the individualistic tendencies of manufacturers, the ingenious fancies of designers, and any weakness of manufacturers tending to yield to the eccentricities



of the public, but also enforces large-scale production, with its tendency to extend its scope to wider markets and its increasing power to crush the small concern with its unique patterns and made-to-order goods. Standardization is both the product and the effect of large combinations. When we cultivate plainer tastes we play into the hands of large-scale business and mass production, which means cheaper costs, but which also opens the pot within which lurks the genie of monopoly with its potential threat of monopoly price.

The Sherman Anti-Trust Law and the decisions of the courts under that law run absolutely counter to the forces that would sponsor standardization. While the fundamental purpose of the law is to restrain practices detrimental to the public interest, and hence it would not seem to include those which can be demonstrated to be beneficial to the public, it now seems to be the opinion of the Department of Justice in interpreting the Sherman Act that any combination which exercises a preponderating influence over a trade is *per se* detrimental to the public and therefore illegal, regardless of its good motives or beneficial effects. If it is desired to legitimatize the economic advantages of combinations, it must be done by an act of Congress. There is no such thing at law as "a good trust" for domestic business.

#### VI. OUTLOOK FOR THE FUTURE

Standardization to a limited extent can be maintained under the existing law, but extensive standardization of manufactured articles must await an altered public opinion with regard to the trust. The gap between the economic advantage and the law of combinations is widening, and sooner or later a change must come. The Webb-Pomerene Act already sanctions combinations for foreign trade, and that means perfect accord among all branches of the domestic industry that are to engage in foreign trade. It will be difficult indeed to distinguish between that part of a company's business that is producing for a foreign market and that part which is producing for a domestic market, and as a result there may develop a body of law as refined as that which seeks to distinguish between intrastate and interstate commerce. It seems that a breach has been made in the unyielding mandate of the

Sherman Law and its interpretation that may weaken the whole structure of the anti-trust laws.

The change will not come without protest. There are forces in addition to the Sherman Anti-Trust Law which will tend to perpetuate individualism. The strength of these forces, however, depends largely upon the power of competition. Intense competition would force the development anew of diverse brands and drive business men back into the manufacture of specialties even against their will. The increase in the number of brands would also be stimulated by the desires of our war-worn soldiers for variety and the backsliding of the civilian population under the temptation of new Egyptian fleshpots. The necessity of giving employment to discharged soldiers will also be a potent excuse for producing useless frills that require an extra expenditure of labor power, in spite of the economic fallacy involved in such an argument.

As the forces of individualism thus struggle to retain their old supremacy, however, the forces tending toward increasing concentration in industry are slowly mobilizing. The standardization of the desires of consumers as well as our growing foreign trade is sweeping us onward toward the quantity production of staple goods. Heterogeneous standards of fashion and variety of style within the United States are being consolidated into a single standard by the centrifugal force that is tearing down the economic barrier between the North and the South, that is merging the frontier West with the effete East, and that is tending to dissolve the hitherto insoluble immigrant elements in our melting-pot, as a part of the process of evolving a new American nation with common customs and ideals. As the foreign demand for American goods increases because of a market expanded by our new international relationships, the increasing speed and carrying capacity of ocean steamers, the wider extension of our credit and reputation abroad, the universalization of wants accomplished by fraternizing with our Allies, and the vacuum in trade created by the prostration of Germany, there will come an increasing tendency toward large-scale production along lines hitherto operated as small-scale units. As we develop more and more into a manufacturing nation, using our own resources for our own mills, feeding raw cotton to cotton mills even as steel is sent to the steel mills, and thereby establishing

integration on an ever-increasing scale, the industries of this country will be knit more closely together. As some American industries thus tend to expand into monopolies of world-wide scope, foreign combinations of trades that possess an advantage over similar American trades will also attain monopoly size by entering our markets and exchanging their wares for the products of our combinations. In this merciless international competition the small business unit will lose even the little market that it has, and the industries of the world will become concentrated into monopolies that from manufacturing centers located at the points of greatest geographical advantage send their standardized products by swift and cheap carriers to the farthest recesses of the Orient and the developing jungles of Africa and South America.

As the industries of the world thus become standardized the wants of the people of the world will be forced into fewer channels, which will reflect themselves back into increasing standardization which will in time communicate itself throughout the world, breaking down differences in dress and fashion everywhere. As the economic relationship between all nations thus becomes closer and more apparent, individualism, the pioneer spirit, and the era of small business will pass from the United States. Many business men read the handwriting on the wall, and with an instinctive intuition that does not always run in economic language they already shrug their shoulders in silent protest against the legal prohibition that attempts to avert the inevitable and to hold back the irresistible force of economic evolution. The criticism of the existing law, however, is tempered by the thought of the evil of unregulated monopoly. While the forces of combination are solidifying, we must develop agencies of regulation that will curb our new-born monopolies before, like the East India Company of old, they weld politics, foreign colonies, and love of country into instruments of pecuniary profit. Let us take heed that the efficiency that results from standardization does not beget a Frankenstein that will imperil the liberties of the masses of consumers at home and draw us into complications abroad.

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